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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,193	04/22/2004	Ayumu Kiyomori	0171-1086PUS1	5551
2292	7590	09/28/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			NYALLEY, LANSANA	
			ART UNIT	PAPER NUMBER
			1621	

DATE MAILED: 09/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/829,193

Applicant(s)

KIYOMORI ET AL.

Examiner

Lansana Nyalley

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-6 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>04/22/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Election/Restrictions

Claims 1-6 are pending

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-5, drawn to process claims of making a silyl ketene acetal of formula 3, classified in class 556, subclass 443, 446.
- II. Claim 6, drawn to the making of disilyl ketene acetal of formula 7,

Classified in class 556, subclass 443; 446.

The inventions of group I and group II are independent and distinct because there is no patentable co-action between them and a reference anticipating one member will not render another obvious. Further, a search of both groups would constitute an undue burden on the examiner because different fields of search in the non-patent literature would be required.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Gerald Murphy on 08/31/04, a provisional election was made with traverse to prosecute the invention of group I, claims 1-5. Affirmation of this election must be made by applicant in replying to this Office action. Claim 6 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Art Unit: 1621

Claims 1- 5 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Dinh et. al. (US patent 5,208,358), in view of Rubinsztajn et. al.(USPGPUB, 2004127668)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S.C 1148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

APPLICANT CLAIMS:

Applicant claim a process for preparing a silyl ketene acetal of general formula (3) comprising the steps of reacting an α , β - unsaturated carboxylic ester of the general formula (1) with a hydrosilane or hydrosiloxane of the general formula (2) in the presence of a catalytic amount of tris(pentafluorophenyl) borane.

DETERMINATION OF SCOPE AND CONTENT OF THE PRIORART

(M.P.E.P.2141.01):

Art Unit: 1621

Dinh et. al. teach a process of preparing a silyl ketene acetal comprising a step (A) of reacting an α , β - unsaturated carboxylic ester with a hydrosilane (Column 2, lines 5-10, fig.1) in the presence of $\text{RhCl}(\text{di-tert-butylsulfide})_2$ catalyst .

Rubinsztajn et. al. teach a process of forming silicon-oxygen bond comprising reacting an organosilane or siloxane compound containing at least one alkoxysilane functional group in the presence of a Lewis acid such as tris(pentafluorophenyl) borane of formula $\text{B}(\text{C}_6\text{F}_5)_3$. Tris(pentafluorophenyl) borane is used because it promotes a rapid reaction between Si-H and SiOR and also because it is an efficient catalyst (page 1, Column 2, paragraph 17, lines 14-18).

ASCERTAINMENT OF THE DIFFERENCE BETWEEN THE PRIOR ART AND THE CLAIMS (M.P.E.P. 2141.02):

The difference between the present invention and Dinh et. al. is that Dinh et. al. use $\text{RhCl}(\text{di-tert-butylsulfide})_2$ catalyst instead of the tris(pentafluorophenyl) borane catalyst used by the claimed invention. However, Rubinsztajn et.al. use tris(pentafluorophenyl) borane as stated above.

FINDING OF PRIMA FACIE OBVIOUSNESS-RATIONAL AND MOTIVATION (M.P.E.P. 2142-2143):

A person of ordinary skill in the art at the time the invention was made would have found it obvious to substitute the conventional catalyst, $\text{RhCl}(\text{di-tert-butylsulfide})_2$ used in Dinh et.al. for a more efficient catalyst like the tris(pentafluorophenyl) borane used in Rubinsztajn et. al. The motivation to do so would have come from the desire to have an

Art Unit: 1621

efficient catalyst that would reduce the reaction time and increase the yield and produce safer by-products.

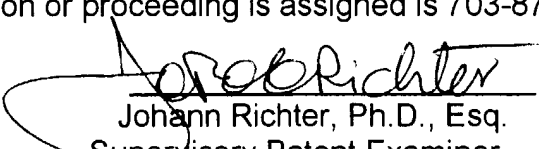
On Page 1, Column 2, paragraph 17, lines 14-18 and paragraph 18, lines 1-4, Rubinsztajn et.al. teach that the use of the conventional catalysts leads to dangerous by-products from the previous reactions thus establishing the need for continuing a search for a better method for higher yields and safer by-products. (Page 4, Column 2, paragraph 53, lines 10-11); (page 1, Column 2, paragraph 19, lines 1-7); (page 4, Column 2, paragraph 52, lines 1-2).

The instant claimed invention would have, therefore, been obvious to one of ordinary skill in the art at the time the invention was made.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lansana Nyalley whose telephone number is 571 272 1600. The examiner can normally be reached on 7:45 to 3:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571 272 0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Lansana Nyalley Ph.D.
14th Sept. 2004


Johann Richter, Ph.D., Esq.
Supervisory Patent Examiner.
Technology Center 1600